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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/660,110

09/11/2003

Mark F. Oldham

5010-406

6842

35411 7590 08/27/2009

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EXAMINER

NEGIN, RUSSELL SCOTT

ART UNIT

PAPER NUMBER

1631

MAIL DATE

DELIVERY MODE

08/27/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/660,110	Applicant(s) OLDHAM ET AL.	
	Examiner RUSSELL S. NEGIN	Art Unit 1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20,33,45 and 56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20,33,45 and 56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Comments

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive, and therefore, the finality of that action is withdrawn. All of the rejections from the previous Office action are withdrawn.

Applicant's amendments and request for reconsideration in the communication filed on 6 August 2009 are acknowledged and the amendments are entered.

Claims 20, 33, 45, and 56 are pending and examined in the instant Office action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following rejection is newly applied:

Claims 20, 33, 45, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Savory et al. [Clinical Chemistry, volume 14, 1968, pages 132-144] in view of Mori et al. [US Patent 3,422,738; issued 21 January 1969; filed 13 July 1965] as evidenced by Rentschler [US Patent 3,687,045; issued 29 August 1972; filed 27 November 1970] in view of Chen et al. [Genome Research, 1998, volume 8, pages 549-556] in view of Tacklind et al. [US PGPUB 2003/0101605; published 5 June 2003; filed 4 December 2001].

The method of claims 20, 33, and 45 are drawn to improving the assessment of a plurality of types of specific particles in a sample using a photodetector that is a charge coupled device. This photodetector detects particles, each type of particle being labeled with a specific probe. Scaling is used between the two configurations of the photodetector to determine the signals out of the dynamic range of the photodetector in a specific configuration (the different independent claims are drawn to different specific signals that are out of range of the photodetector). Specifically, the scaling procedure extends the dynamic range of each configuration of the photodetector by taking and using ratios relating exposure times to signal intensities. Claim 56 is further limiting wherein these ratios are directly applied to the fourth output signal.

The study of Savory et al. investigates an improved procedure for the determination of serum ethanol by gas chromatography. Specifically, Figure 5 on page 141 of Savory et al. illustrates the chromatograms of a single sample of six different compounds obtained in two different configurations of the GC apparatus (Helium flow= 75 ml per min and 45 ml per min, respectively). In this second configuration, the peaks are lower in height than in the first configuration (i.e. while the y axis or dynamic ranges of the chromatograms go to 8 cm and 10 cm, respectively for each of the two configurations, some of the peaks in the first configuration would be out of the dynamic range of the detector in the second configuration).

However, Savory et al. does not show actual scaling between the configurations, nor does he use a photodetector to detect the presence of particles labeled with probes (Savory et al. use a detector and not a CCD device)

The document of Mori et al. studies an automatic exposure flash camera.

Applicant is directed to the equations governing exposure time and resistances in column 3, lines 1-35 of Mori et al. Although there are two times listed as in the instant claims (T1 and T2), applicant is directed solely to T2, which is the PROPER exposure time of the object. The equation to the right in line 27 of column 3 of Mori et al. demonstrates a direct proportionality between exposure time and resistance. While Mori et al. does not teach that resistance is related to intensity, the document of Rentschler, which studies a camera shutter mechanism, teaches in column 6, lines 48-52:

This is important, particularly for cameras with electronic exposure time setting where exposure times are supposed to be proportional to ***the resistance value of the photoresistance and thereby to light intensity.***

Consequently, the proportionality of exposure time to resistance thereby indicates proportionality to light intensity. Thus, this combination of the Mori et al. and Rentschler satisfies the limitations of the independent claims which use ratios between exposure times to proportionally calculate signal intensities of signals that would otherwise be out of range of the detector.

However, Savory et al. and Mori et al. do not use a photodetector to detect the presence of particles labeled with probes (Savory et al. and Mori et al. use a detector and not a CCD device).

The study of Chen et al. is a homogeneous ligase mediated DNA diagnostic test.

Figures 1 and 2 of Chen et al. illustrate an assay and the result of a DOL assay with FRET detection using probes to label the nucleic acid segments. Figure 3 of Chen et al. illustrates the fluorescence intensity profiles of a PCR-DOL assay.

However, Savory et al., Mori et al., and Chen et al. do not use a CCD device to detect the presence of particles labeled with probes.

The invention of Tacklind et al. studies a servo-controlled automatic level and plumb tool and explains the use of charge coupled devices in paragraph [0060] where it is stated that "The position sensitive photo sensor can incorporate any of a number of commercially available position sensitive detectors sensitive to the detector light... Examples include charged coupled detectors (CCD)."

Consequently, charged coupled detectors are used to assist in analyzing signals from detectors.

It would have been obvious for someone of ordinary skill in the art at the time of the instant invention to modify the gas chromatography study of Savory et al. by scaling peak size to obtain signals out of range of the detector by using the proportionality equations of Mori et al. because it is obvious to combine known elements in the prior art to yield a predictable result. The use of proportionality scaling is an alternate means of assessing intensities of objects such as those studied in Savory et al. There would have been a reasonable expectation of success in combining Savory et al. and Mori et al. because they both analogously use detectors to measure the intensity of objects.

It would have been further obvious for someone of ordinary skill in the art at the time of the instant invention to modify the detector analysis of Savory et al. and Mori et al. by use of the photodetector analysis of Chen et al. because it is obvious to substitute known elements in the prior art to yield a predictable result. In this instance, both types of detector yield the predictable result of sample quantities. There would have been a reasonable expectation of success in combining Savory et al., Mori et al., and Chen et al. because in this instance, the detectors and photodetector are used for the same purpose (to detect intensities).

It would have been further obvious to someone of ordinary skill in the art at the time of the instant invention to modify the detector analyses of Savory et al., Mori et al., and Chen et al. by use of the CCDs of Tacklind et al. because it is obvious to apply a known technique to a known method to yield a predictable result. In this instance, it

would have been obvious to apply the known technique of using CCDs to analyze signals to the known method of using photodetectors to measure sample amount as in Savory et al., Mori et al., and Chen et al. to yield the predictable result of modified spectra and a modified means of receiving the relevant signals. There would have been a reasonable expectation of success in combining a CCD of Tacklind et al. with the detectors and photodetectors of Savory et al., Mori et al., and Chen et al. because the charge coupled device of Tacklind et al. allows an alternative means of measuring the intensities of particles and converting them into electrical signals.

Response to Arguments:

Applicant's arguments with respect to the instant claims been considered but are moot in view of the new ground(s) of rejection.

Conclusion

No claim is allowed.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the central PTO Fax Center. The faxing of such pages must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CFR § 1.6(d)). The Central PTO Fax Center Number is (571) 273-8300.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Negin, whose telephone number is (571) 272-1083. The examiner can normally be reached on Monday-Friday from 7am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Marjorie Moran, Supervisory Patent Examiner, can be reached at (571) 272-0720.

Information regarding the status of the application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information on the PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/RSN/
Russell S. Negin
16 August 2009

/Marjorie Moran/
Supervisory Patent Examiner, Art Unit 1631